Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of determining an optimum set of write parameters for a laser device for writing to an optical storage medium, the method comprising acts of:

defining a test region of the optical storage medium;

using a laser device having an operating set of write parameters, writing a reference data pattern using a reference set of write parameters of the laser device to the test region, and a measurement data pattern using a measurement set of write parameters of the laser device to the test region;

measuring jitter values for the reference and measurement data patterns; and

selecting an optimum operating set of write parameters of the laser device for writing data to the optical storage medium in dependence upon the measured reference and measurement jitter values, the optimum set of write parameters minimizing the jitter value for the optical storage medium, wherein a power level of the

laser device varies over the writing of the measurement data pattern and wherein the power level of the laser device over the writing of the reference data pattern is fixed.

2. (Canceled)

3. (Canceled)

4. (Currently amended) The method as claimed in claim ~~3~~1, wherein the power level of the laser device rises from a minimum level to a maximum level over the writing of the measurement data pattern.

5. (Previously presented) The method as claimed in claim 4, wherein the power level of the laser device rises in discrete steps over the writing of the measurement data pattern.

6. (Canceled)

7 (Previously presented) The method as claimed in claim 1, wherein the measured jitter values relate to an average of jitter values of the measurement and reference data patterns.

8 (Previously presented) The method as claimed in claim 1, wherein the optical medium is a disc, and wherein the reference and measurement data patterns form an alternating pattern on a single track of the disc.

9. (Previously presented) The method as claimed in claim 1, wherein the optical medium is a disc, and wherein the reference and measurement data patterns are written on consecutive tracks of the disc.

10. (Previously presented) The method as claimed in claim 1, wherein the optical medium is a disc, and wherein the reference and measurement data patterns are written on neighboring tracks of the disc.

11. (Currently amended) Apparatus for determining an optimum power level for a laser device for writing to an optical storage medium having a test region defined thereon, the apparatus comprising:

an optical writing device operable to write a reference data pattern using a reference set of write parameters to the test

region and a measurement data pattern using a measurement set of write parameters to the test region, wherein a power level of the optical writing device varies over the writing of the measurement data pattern and wherein the power level of the optical writing device over the writing of the reference data pattern is fixed;

a measurement device operable to measure jitter values for the reference and measurement data patterns on an optical medium; and

a power controller operable to select an optimum operating set of write parameters of the laser device for writing data to the optical storage medium in dependence upon measured reference and measurement jitter values, the optimum set of write parameters minimizing the jitter value for the optical storage medium.

12. (Canceled)

13. (Canceled)

14. (Currently amended) The apparatus as claimed in claim ~~13~~11, wherein the power level of the laser device rises from a minimum level to a maximum level over the writing of the measurement data pattern.

15. (Previously presented) The apparatus as claimed in claim 14, wherein the power level of the laser device rises in discrete steps.

16. (Canceled)

17. (Previously presented) The apparatus as claimed in claim 11, wherein the measured jitter values relate to an average of jitter values of the measurement and reference data patterns.

18. (Previously presented) The apparatus as claimed in claim 11, wherein the optical medium is a disc, and wherein the reference and measurement data patterns form an alternating pattern on a single track of the disc.

19. (Previously presented) The apparatus as claimed in claim 11, wherein the optical medium is a disc, and wherein the reference and measurement data patterns form are written on consecutive tracks of the disc.

20. (Previously presented) The apparatus as claimed in claim 11, wherein the optical medium is a disc, and wherein the reference and measurement data patterns are written on neighboring tracks of the disc.

21. (New) The method as claimed in claim 1, comprising an act of calculating a normalized jitter value, wherein the optimum operating set of write parameters is selected based on the normalized jitter value, wherein the normalized jitter value is calculated by

$$jitter_{norm} = \sqrt{\left|(jitter_{meas})^2 - (jitter_{ref})^2\right|}$$

and wherein $jitter_{norm}$ is the normalized jitter value, $jitter_{meas}$ is the measured jitter value of the measurement data pattern, and $jitter_{ref}$ is the measured jitter value of the reference data pattern.

22. (New) The method as claimed in claim 21, wherein a sign of $jitter_{norm}$ is selected based on relative sizes of $jitter_{meas}$ and $jitter_{ref}$.

23. (New) The method as claimed in claim 1, comprising an act of calculating a normalized jitter value, wherein the optimum operating set of write parameters is selected based on the normalized jitter value, wherein the normalized jitter value is calculated by

$$jitter_{norm} = jitter_{meas} - jitter_{ref}$$

and wherein $jitter_{norm}$ is the normalized jitter value, $jitter_{meas}$ is the measured jitter value of the measurement data pattern, and $jitter_{ref}$ is the measured jitter value of the reference data pattern.

24. (New) The apparatus as claimed in claim 11, wherein the power controller is operable to select the optimum operating set of write parameters of the laser device for writing data to the optical storage medium in dependence upon a normalized jitter value, wherein the normalized jitter value is calculated by

$$jitter_{norm} = \sqrt{\left|(jitter_{meas})^2 - (jitter_{ref})^2\right|}$$

and wherein $jitter_{norm}$ is the normalized jitter value, $jitter_{meas}$ is the measured jitter value of the measurement data pattern, and

$jitter_{ref}$ is the measured jitter value of the reference data pattern.

25. (New) The apparatus as claimed in claim 24, wherein a sign of $jitter_{norm}$ is selected based on relative sizes of $jitter_{meas}$ and $jitter_{ref}$.

26. (New) The apparatus as claimed in claim 11, wherein the power controller is operable to select the optimum operating set of write parameters of the laser device for writing data to the optical storage medium in dependence upon a normalized jitter value, wherein the normalized jitter value is calculated by

$$jitter_{norm} = jitter_{meas} - jitter_{ref}$$

and wherein $jitter_{norm}$ is the normalized jitter value, $jitter_{meas}$ is the measured jitter value of the measurement data pattern, and $jitter_{ref}$ is the measured jitter value of the reference data pattern.